

General

Title

Bilateral cardiac catheterization: percentage of bilateral cardiac catheterization discharges per 1,000 heart catheterization discharges for coronary artery disease for patients 18 years and older.

Source(s)

AHRQ QI research version 5.0. Inpatient quality indicator 25 technical specifications: bilateral cardiac catheterization rate. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2015 Mar. 3 p.

National Quality Forum measure information: bilateral cardiac catheterization rate (IQI 25). Washington (DC): National Quality Forum (NQF); 2014 Jan 2. 13 p.

Measure Domain

Primary Measure Domain

Related Health Care Delivery Measures: Use of Services

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of bilateral cardiac catheterization discharges per 1,000 heart catheterization discharges for coronary artery disease for patients 18 years and older.

Rationale

The diagnostic evaluation of patients with presumptive coronary artery disease often involves cardiac catheterization with coronary angiography. Left-sided catheterization provides very useful information about coronary anatomy, as well as left ventricular function and valvular anatomy. Right-sided catheterization is often performed at the same time, but this practice raises two appropriateness issues.

First, without a specific indication for right heart catheterization, the clinical yield is extremely low. In the most rigorous prospective study of this phenomenon, case management was changed for only 1.5% of patients who received an incidental right heart catheterization without a listed indication (Hill et al., 1990). Similar results have been reported from two retrospective studies (Shanes et al., 1987; Friedman, 1978), while other studies failed to distinguish unsuspected right-sided abnormalities that affected management from those that did not (Barron et al., 1988). Second, the marginal cost of right heart catheterization has been estimated to exceed \$650 per case and \$120 million for the nation.

Providers should reduce the rate of bilateral catheterization for patients where not indicated. Consumers should select providers with lower rates.

Evidence for Rationale

Barron JT, Ruggie N, Uretz E, Messer JV. Findings on routine right heart catheterization in patients with suspected coronary artery disease. *Am Heart J.* 1988 Jun;115(6):1193-8. [PubMed](#)

Friedman HS. Right-heart catheterization in coronary artery disease. *Angiology.* 1978 Dec;29(12):878-87. [PubMed](#)

Hill JA, Miranda AA, Keim SG, Decker MH, Gonzalez JI, Lambert CR. Value of right-sided cardiac catheterization in patients undergoing left-sided cardiac catheterization for evaluation of coronary artery disease. *Am J Cardiol.* 1990 Mar 1;65(9):590-3. [PubMed](#)

National Quality Forum measure information: bilateral cardiac catheterization rate (IQI 25). Washington (DC): National Quality Forum (NQF); 2014 Jan 2. 13 p.

Shanes JG, Stein MA, Dierenfeldt BJ, Kondos GT. The value of routine right heart catheterization in patients undergoing coronary arteriography. *Am Heart J.* 1987 May;113(5):1261-3. [PubMed](#)

Primary Health Components

Coronary artery disease; bilateral cardiac catheterization

Denominator Description

Discharges, for patients ages 18 years and older, with any-listed International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) procedure codes for heart catheterization and any-listed ICD-9-CM diagnosis codes for coronary artery disease (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with any-listed International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) procedure codes for right and left heart catheterization without any-listed ICD-9-CM diagnosis codes for indications for right-sided catheterization (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Reliability Testing

Data/Sample. N=4,000 hospitals and 38 million discharges ("Healthcare Cost and Utilization Project [HCUP] State Inpatient Databases [SID]," 2007).

Analytic Method. Annual review of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) coding updates for numerator and denominator specifications.

Testing Results. Not applicable.

Validity Testing

Data/Sample. N=4,000 hospitals and 38 million discharges ("HCUP SID," 2007).

Analytic Method. Annual update of comparative data.

Testing Results. Signal variance of 0.000017035199; signal ratio of 0.90.

Refer to the original measure documentation for additional measure testing information.

Evidence for Extent of Measure Testing

Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID). Rockville (MD): Agency for Health Research and Quality (AHRQ); 2007.

National Quality Forum measure information: bilateral cardiac catheterization rate (IQI 25). Washington (DC): National Quality Forum (NQF); 2014 Jan 2. 13 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Hospital Inpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Does not apply to this measure

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Priority

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Not within an IOM Care Need

IOM Domain

Not within an IOM Domain

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Institutionalization

Patient/Individual (Consumer) Characteristic

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

Discharges, for patients ages 18 years and older, with any-listed International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) procedure codes for heart catheterization and any-listed ICD-9-CM diagnosis codes for coronary artery disease

Note: Refer to the original measure documentation for ICD-9-CM codes.

Exclusions

Exclude cases:

Major Diagnostic Categories (MDC) 14 (pregnancy, childbirth, and puerperium)

With missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with any-listed International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) procedure codes for right and left heart catheterization without any-listed ICD-9-CM diagnosis codes for indications for right-sided catheterization

Note: Refer to the original measure documentation for ICD-9-CM codes.

Exclusions

Unspecified

Numerator Search Strategy

Institutionalization

Data Source

Administrative clinical data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Does not apply to this measure (i.e., there is no pre-defined preference for the measure score)

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

IQI 25: bilateral cardiac catheterization rate.

Measure Collection Name

Measure Set Name

Inpatient Quality Indicators

Submitter

Agency for Healthcare Research and Quality - Federal Government Agency [U.S.]

Developer

Agency for Healthcare Research and Quality - Federal Government Agency [U.S.]

Funding Source(s)

Agency for Healthcare Research and Quality (AHRQ)

Composition of the Group that Developed the Measure

The Agency for Healthcare Research and Quality (AHRQ) Quality Indicator (QI) measures are developed by a team of clinical and measurement experts in collaboration with AHRQ. The AHRQ QIs are continually updated as a result of new research evidence and validation efforts, user feedback, guidance from the National Quality Forum (NQF), and general advances in the science of quality measurement.

Financial Disclosures/Other Potential Conflicts of Interest

None

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2015 Jan 5

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Mar

Measure Maintenance

Measure is reviewed and updated on a yearly basis

Date of Next Anticipated Revision

Spring 2016 (version 6.0, including International Classification of Diseases, Tenth Revision, Clinical Modification [ICD-10-CM] and International Classification of Diseases, Tenth Revision, Procedure Coding System [ICD-10-PCS] compatible software)

Measure Status

This is the current release of the measure.

This measure updates a previous version: AHRQ QI. Inpatient quality indicators #25: technical specifications. Bilateral cardiac catheterization rate [version 4.4]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2012 Mar. 3 p.

Measure Availability

Source available from the [Agency for Healthcare Research and Quality \(AHRQ\) Quality Indicators \(QI\) Web site](#) .

For more information, contact the AHRQ QI Support Team at E-mail: QIsupport@ahrq.hhs.gov; Phone: 301-427-1949.

Companion Documents

The following are available:

AHRQ quality indicators. Inpatient quality indicators (IQI) parameter estimates [version 5.0]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2015 Mar. 42 p. This document is available from the [AHRQ Quality Indicators Web site](#) .

AHRQ quality indicators. Inpatient quality indicators benchmark data tables [version 5.0]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2015 Mar. 22 p. This document is available from the [AHRQ Quality Indicators Web site](#) .

AHRQ quality indicators. Inpatient quality indicators composite measure workgroup. Final report. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2008 Mar. various p. This document is available from the [AHRQ Quality Indicators Web site](#) .

HCUPnet: a tool for identifying, tracking, and analyzing national hospital statistics. [Web site]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); [accessed 2015 Sep 10].

HCUPnet is available from the [AHRQ Web site](#) .

NQMC Status

This NQMC summary was completed by ECRI on December 4, 2002. The information was verified by the Agency for Healthcare Research and Quality on December 26, 2002.

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The information was verified by the measure developer on February 16, 2016.

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No copyright restrictions apply.

Production

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